CLASS TITLE: COMPUTER-AIDED DESIGN/BUILDING INFORMATION MODELING MANAGER (DOT)

Class Code: 02773700
Pay Grade: 35A
EO Code: B

CLASS DEFINITION:

GENERAL STATEMENT OF DUTIES: Within the Department of Transportation, to be responsible for gathering, extracting, analyzing and transferring design data from various sources, for preparing studies, reports and final plans for a project management team, and utilizing Computer-Aided Design (CAD)/Building Information Modeling (BIM) technology; to perform the most complex work using CAD/BIM technology in roadway and bridge design; to review and evaluate engineering reports, studies and/or plans prepared by the project teams, consulting design firms, and/or other contributors; and to do related work as required.

SUPERVISION RECEIVED: Works under the general supervision of a superior with considerable latitude for the exercise of independent judgment in the application of CAD/BIM maintenance techniques; work is reviewed upon completion for results obtained and conformance to agency policies and objectives.

SUPERVISION EXERCISED: May lead technical employees assigned to assist.

ILLUSTRATIVE EXAMPLES OF WORK PERFORMED:

Within the Department of Transportation, to be responsible for gathering, extracting, analyzing and transferring design data from various sources, for preparing studies, reports and final plans for a project management team, and utilizing Computer-Aided Design (CAD)/Building Information Modeling (BIM) technology.

To perform the most complex work using CAD/BIM technology in roadway and bridge design.

To review and evaluate engineering reports, studies and/or plans prepared by the project teams, consulting design firms and/or other contributors.

To prepare and review complex drawings and bridge designs.

To calculate and check computations for structural materials, quantities, cost estimates and develop complex highway and bridge structural designs.

To review shop plans and completed assignments of internal team members and others for accuracy and conformance with laws, regulations, contracts and relevant industry standards.

To prepare the most complex maps, profiles, cross-sections and cost estimates for projects.

To design, code, develop, support, and configure engineering software applications to be used by the department's engineers and designers.

To support, install, update, and maintain design software for department end users.

To establish and control standards for external and internal users of CAD/BIM tools.

To initiate, implement and manage an audit process to establish and maintain quality standards at various stages in the project life cycle.

To train end users and internal team members involving the department's engineering software applications and assist end users with software.

To design and update online training for engineering applications using learning management software.

To create and update manuals and technical exercises concerning a variety of engineering applications.

To communicate with software vendors and department personnel for software solutions and evaluate new software products.

To participate as a project team member in the analysis, design and preparation of construction plans, quantities and engineering reports.

To perform or assist in moderately and highly complex analyses and designs.

To develop and update CAD resources for project teams and consultants to ensure compliance with departmental standards, policies and procedures.

To represent the section manager or project team at construction partnering sessions, meetings, reviewing other units, outside agencies, and/or their consultants.

To review engineering studies, reports, designs, CAD and non-CAD related plans, maps for internal team projects, quantities developed by other sections, outside agencies or consultants, and recommend approval or disapproval.

To produce engineering data analyses, studies, plans, quantities and engineering reports for team projects, utilizing available computer hardware and software.

To provide research, development and testing services for the section involving CAD related software and documents.

To provide on the job training for project team members.

To attend staff meetings and implement directives received concerning technical issues.

To provide post-design services for projects under construction.

To review and approve engineering project data, submitted by project teams for integration with the department's Geographic Information System, Asset Management System and Document Management Systems.

To do related work as required.

REQUIRED QUALIFICATIONS FOR APPOINTMENT:

KNOWLEDGE, SKILLS AND CAPACITIES: A thorough knowledge of the principles and practices of Computer-Aided Design (CAD)/Building Information Modeling (BIM) technology used in gathering, extracting, analyzing and transferring design data from various sources, preparing studies, reports and final plans for a project management team; a thorough knowledge of the principles and practices of civil engineering as applied to the development, design, construction and maintenance of the state highway system; a thorough knowledge of engineering principals used in calculating and checking computations for structural materials, quantities, cost estimates and other relevant structural design details; a thorough knowledge of civil engineering principals used in composing and reviewing shop plans, drawings, maps and completed assignments of subordinate team members for highway and bridge projects, for conformance with relevant laws, regulations, contracts, and industry standards; a thorough knowledge of Computer-Aided Design (CAD)/Building Information Modeling (BIM) technology used in designing, coding, developing and sustaining engineering software applications used by the department's engineers, designers internal team members and end users; a thorough knowledge of various building information modeling software such as: Civil 3, Infra-Works, Revit, Autodesk, ESRI, and other BIM applications, Cloud-connected tools, and Microsoft applications; a working knowledge of federal and state regulations, policies, procedures, design standards and guidelines used in the highway development process; the ability to develop and implement on-line training for internal team members and departmental personnel; the ability to communicate effectively in verbal and written communications; the ability to establish and control standards for external and internal users of CAD/BIM tools; the ability to implement and manage an audit process to establish and maintain quality standards at various stages in the project lifecycle; the ability to develop roadway plans; the ability to produce drainage reports, earthworks reports, quantity reports and cost estimates; and related capacities and abilities.

EDUCATION AND EXPERIENCE:

Education: Possession of a Bachelor's Degree in Civil Engineering, Architectural Design or Computer-Aided Design from a college of recognized standing supplemented with advanced courses in computer-aided drafting and design; and

Experience: Considerable employment in a responsible architectural or engineering design position performing architectural design, highway or bridge design, traffic engineering or surveying using Computer-Aided Design (CAD)/Building Information Modeling (BIM) technology for drafting and BIM Design technology.

Or, any combination of education and experience that shall be substantially equivalent to the above education and experience.

Class Created: May 14, 2017
Class Revised: February 17, 2019